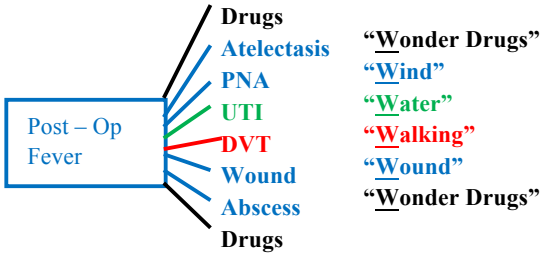
Fever in the post-op period can be narrowed down by **when the fever started** and a little bit on the history. Symptoms often aren't useful because patients are either sedated or on pain medications – they may misrepresent themselves. The common **5-Ws** is how to remember to look in one place or another. **Drugs** are at either end of the spectrum.



Malignant Hyperthermia (Wonder Drugs)
If there's a **fever after anesthesia** (halothane or succinylcholine) or a **fever > 104**, assume malignant hyperthermia. There's no reason for hyperthermia during surgery. Give the patient **Oxygen**, **Dantrolene**, **Cooling Blankets**, and watch for myoglobinuria (i.e. follow with a U/A). This is the only time you'll see "Dantrolene."

Atelectasis (Wind)
A fever on the **first day**. Do a **CXR** and listen to the lungs. If positive, give **spirometry** to improve ventilation. If there isn't improvement a complete fever workup may be needed: **XR** + **U/A** + **Blood Cultures**. Do prophylactic incentive spirometry always.

Pneumonia (Wind)
A fever on the **second day -** especially if the atelectasis wasn't fixed - can turn into pneumonia. Because you're a good student and already gave prophylactic spirometry (which everyone should get), the worry is now about pneumonia. First, do a **CXR** to see **consolidation**. Treat for Hospital Acquired Pneumonia (Vancomycin and Pip/Tazo) while awaiting **cultures**.

UTI (Water)
A fever on the **third day** is likely to be a UTI. Do a **U/A** and **Urine Culture** then treat with the appropriate antibiotics. This is the only fever that can't be prophylaxed against; but the incidence can be decreased by taking the foley out early. If they can pee on their own, let them. For CAUTI (catheter related) start with **Ceftriaxone**.

DVT/PE (Walking)
If a patient has a fever that starts on **Day 5**, remember the Virchow's Triad. Surgery + Immobilization = bad news. A ⊕ **Exam** (2 cm greater on one leg compared to the other) is highly suggestive. "Calf pain" and "Homan's sign" are useless. **Ultrasound** the legs to diagnose. Anticoagulate with **Low Molecular Weight Heparin** bridge to warfarin. Prophylax with **early mobilization** and heparins.

Wound Infection (Wound)
A fever that begins after **7 days** is likely to be a wound infection. A good closure and good **wound care** could prevent this. By this time the erythema of surgery has gone; it's likely infection. If it's just **erythematous and warm** it's a cellulitis. Treat with **antibiotics**. If **erythematous, warm AND boggy**, drain the **abscess**. If not sure, an **Ultrasound** can be done to clarify.

Deep Abscess (Wound)
Someone messed up. Bad. There was a **dirty** surgery, but it's only come to light **2 weeks later**. You'll probably panculture the patient thinking "new infection unrelated to the surgery" but no - a **CT scan** will show the deep abscess that needs to be drained, often prompting revision and another trip to the OR.

When	*Dz*	*Tx*	*PPx*
During Surgery	Malignant Hyperthermia	Dantrolene Cooling O2	Family History
Right After Surgery	Bacteremia	Blood Culture, Abx	Don't Poke the Bowel
Day 1	Atelectasis	CXR, ICS	ICS
Day 2	Pneumonia	CXR, Abx	ICS
Day 3	UTI	U/A, Abx	None
Day 5	DVT	U/S, Heparin	Ambulation, Heparin
Day 7	Wound	U/S, Abx	Don't mess up your surgeries
Day > 10	Abscess	CT, Drain / Abx	

Casts imply they had pyelonephritis BEFORE the surgery
Catheter Related UTIs are DONTs – get the foleys out
Leave indwelling catheters if they were there before the surgery!

Orthopedic surgeries are the highest risk for DVT/PE

LMWH bridge to Warfarin = LMWH start NOAC
Must bridge to Warfarin No Bridge to NOAC

NOAC = Apixiban, Rivaroxaban, Apixiban